CLAIMS

I claim:

1. A seal assembly, comprising:

a thermoplastic seal;

a preload member adapted to apply a force to and induce cold flow of the thermoplastic seal.

2. The seal assembly of claim 1, further comprising a ferrule abutting an end of the thermoplastic seal.

3. The seal assembly of claim 1, wherein the ferrule is formed of a metal material.

4. The seal assembly of claim 1, wherein the thermoplastic seal has a slot formed in an end thereof.

5. The seal assembly of claim 4, further comprising a ferrule having a protruding, tapered end abutting the end of the thermoplastic seal.

6. The seal assembly of claim 1, wherein the preload member is a threaded mandrel.

7. The seal assembly of claim 1, further comprising a spring adapted to maintain a force on the thermoplastic seal.

8. The seal assembly of claim 1, wherein the thermoplastic seal has a tensile modulus equal to or greater than 500,000 psi at room temperature.

9. The seal assembly of claim 1, wherein the thermoplastic seal has a flexural modulus equal to or greater than 500,000 psi at room temperature.

10. The seal assembly of claim 1, wherein the thermoplastic seal comprises PEEK.

11. The seal assembly of claim 1, wherein the thermoplastic seal comprises PEK.

12. The seal assembly of claim 1, wherein the thermoplastic seal comprises PPS.

13. The seal assembly of claim 1, wherein the thermoplastic seal comprises PEKEKK.

14. The seal assembly of claim 1, wherein the thermoplastic seal comprises PET.

15. A method for sealing, comprising:

providing a seal having a component formed of a thermoplastic;

inducing deformation of the component to create a fluidic seal.

16. The method of claim 15, further comprising applying a preload to the seal to induce the deformation.

17. The method of claim 15, wherein the deformation comprises cold flow.

18. The method of claim 15, wherein the deformation comprises crimping.

19. The method of claim 15, wherein the deformation comprises clamping.

20. The method of claim 15, further comprising maintaining the preload on the seal.

21. The method of claim 15, wherein the thermoplastic has a tensile modulus equal to or greater than 500,000 psi at room temperature.

22. The method of claim 15, wherein the thermoplastic has a flexural modulus equal to or greater than 500,000 psi at room temperature.

23. The method of claim 15, wherein the thermoplastic comprises PEEK.

24. The method of claim 15, wherein the thermoplastic comprises PEK.

25. The method of claim 15, wherein the thermoplastic comprises PPS.

26. The method of claim 15, wherein the thermoplastic comprises PEKEKK.

27. The method of claim 15, wherein the thermoplastic comprises PET.

28. A seal, comprising:

a ferrule; and

an adjacent seal member deformed by cold flow about at least a portion of the ferrule.

29. The seal of claim 28, wherein the seal comprises a thermoplastic.

30. The seal assembly of claim 29, wherein the thermoplastic has a tensile modulus equal to or greater than 500,000 psi at room temperature.

31. The seal assembly of claim 29, wherein the thermoplastic has a flexural modulus equal to or greater than 500,000 psi at room temperature.

32. The seal assembly of claim 29, wherein the thermoplastic comprises PEEK.

33. The seal assembly of claim 29, wherein the thermoplastic comprises PEK.

34. The seal assembly of claim 29, wherein the thermoplastic comprises PPS.

35. The seal assembly of claim 29, wherein the thermoplastic comprises PEKEKK.

36. The seal assembly of claim 29, wherein the thermoplastic comprises PET.

37. The seal of claim 28, further comprising a preload member.

38. A seal, comprising:

a housing;

a deformed thermoplastic seal member that provides a fluidic seal against the housing and a component.

39. The seal of claim 38, wherein the component is a control line.

40. The seal of claim 38, wherein the seal member has a tensile modulus equal to or greater than 500,000 psi at room temperature.

41. The seal of claim 38, wherein the seal member has a flexural modulus equal to or greater than 500,000 psi at room temperature.

42. The seal of claim 38, wherein the seal member comprises a PEEK material.

43. The seal of claim 38, wherein the seal member comprises a PEK material.

44. The seal of claim 38, wherein the seal member comprises a PPS material.

1 45. The seal of claim 38, wherein the seal member comprises a PEKEKK material.

1 46. The seal of claim 38, wherein the seal member comprises a PET material.